FullPOWER EVO VFD (1+i)

TCAIT-TCAIQ 2560÷31840

Cooling capacity 548,4÷1839,1 kW

Features

Continuous power adjustment from 8 to 100%

SEER up to 5,23 with FIEC accessory (EC fans)

R513A and R134a

Wide range of accessories

Integrated MASTER/SLAVE control

Tax incentives*

Packaged air-cooled water chillers with axial fans. Series with stepless semi-hermetic screw compressors and variable Vi with inverter adjustment and R513A or R134a refrigerant gas.

Construction features

• Compressor: high energy efficiency semi-hermetic screw driven by fixed speed motor with linear capacity control and variable Vi regulated by inverter (8-100%), limited inrush start-up, complete with integral protection, casing heater, oil level sensor and shut-off valve on refrigerant gas outlet piping.

• Water side heat exchanger: dry expansion shell and tube exchanger with counterflow heat exchange, complete with closed cell polyurethane foam rubber insulation, water flow differential pressure switch and Victaulic fittings.

• Air side heat exchanger: with micro-channels.

• Fan: external rotor axial type electric fans equipped with internal thermal protection, accident protection grilles and proportional electronic device for continuous fan rotation speed adjustment.

• Control: microprocessor electronic control.

• Structure: made of galvanised and painted steel plate with polyester powder coating.

• The unit is also complete with:

– display of cooling circuit high/low pressure;

– electronic expansion valve;

– oil level sensor;

– clock board;

– Master/Slave control up to 4 units in parallel;

– control of Variable Primary Flow (VPF_R).

Versions

• T - High efficiency version with oversized condensing section (TCAITL-TCAITZ).
• Q - Super-silenced version complete with compressor technical compartment soundproofing, reduced speed fans and oversized condensing section (TCAIQL-TCAIQZ).

Models

• TCAITL: high efficiency unit designed for cooling only with R513A gas.

• TCAIQL: super silenced unit designed for cooling only with R513A gas.

• TCAITZ: high efficiency unit designed for cooling only with R134a gas.

• TCAIQZ: super silenced unit designed for cooling only with R134a gas.

Factory fitted accessories

• PUMP with single or double electric pump, one of which automatic in standby. The electric pumps are available in the low or high head versions.
• Inverter pump control for unit start-up.
• Desuperheater.
• 100% heat recovery unit.
• Freecooling module management.
• Condensing control with fans with EC motor.
• Condensing control with over-pressure fans (T version only).
• Power factor correction capacitors ($\cos\phi > 0.94$).
• Compressor circuit breaker switches.
• Electro-mechanical flow switch.
• EMC anti-disturbance filters.
• Forced limit of power consumption.
• Forced noise limit.
• Energy parameter measuring device.
• Soft starter.
• Soundproofed compressor box.
• Cooling circuit intake valves.
• Refrigerant leak detector.
• Cooling circuit high and low pressure gauges.
• Double safety valves.
• Coil protection nets or buffer panels.
• Microchannel coils with E-coating treatment, copper/aluminium, copper/copper, pre-painted copper/aluminium.
• Control of min/max power supply voltage.
• Digital input for double set-point.
• 4-20 mA analogue signal for shifting set-point.
• Evaporator antifreeze heater, electrical panel, electric pumps and heat exchangers for heat recovery if applicable.
• Low temperature water production.
• Interfaces for serial communication with other devices.
• Colour touch keypad (fitted on the machine or remotely) with 7" display.
• Spring anti-vibration mounts.
• Protective packaging.

Separately supplied accessories

• Remote keypad with display.

• Thermostat with display.

• Rhoss supervisors for unit monitoring and remote management.

• Rhoss sequencer for integrated management of multiple chillers.

Technical data

TCAITL-TCAIQL MODEL		2560	2600	2670	2710	2770	2860	2930	2980
❶ Nominal cooling capacity	kW	567,4	607,5	677,4	719,4	773,4	869,3	941,3	987,3
❶ Nominal cooling capacity	kW	548,4	584,5	657,4	694,4	746,4	839,3	908,4	953,3
❶ E.E.R.		3,14	3,18	3,16	3,15	3,2	3,17	3,25	3,22
❶ E.E.R.		2,93	3,02	2,91	2,86	2,96	2,87	2,96	2,96
❶ Absorbed power	kW	180,7	191	214,4	228,4	241,7	274,2	289,6	306,6
❶ Absorbed power	kW	187,2	193,5	225,9	242,8	252,2	292,4	306,9	322,1
TCAITL-TCAIQL MODEL		**2560**	**2600**	**2670**	**2710**	**2770**	**2860**	**2930**	**2980**
❷ Sound pressure	dB(A)	68	69	69	69	70	70	71	71
❷ Sound pressure	dB(A)	60	60	60	60	61	62	62	62
❸ Sound power	dB(A)	101	102	102	102	103	103	104	104
❸ Sound power	dB(A)	93	93	93	93	94	95	95	95
Screw compressors	n.	1 inverter + 1	1 inverter + 1	1 inverter + 1	1 inverter + 1	1 inverter + 1	1 inverter + 1	1 inverter + 1	1 inverter + 1
Circuits	n.	2	2	2	2	2	2	2	2
Electrical supply	V-ph-Hz	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50
DIMENSIONS AND WEIGHTS		**2560**	**2600**	**2670**	**2710**	**2770**	**2860**	**2930**	**2980**
L – Width	mm	6090	7250	7250	7250	8350	8350	9450	10550
H – Height	mm	2480	2480	2480	2480	2480	2480	2480	2480
P – Depth	mm	2260	2260	2260	2260	2260	2260	2260	2260
❹ TCAITL weight	kg	4314	4727	4797	4807	5641	5741	6146	6416
❹ TCAIQL weight	kg	4694	5127	5197	5207	6041	6141	6546	6816
SEASONAL ENERGY PERFORMANCE		**2560**	**2600**	**2670**	**2710**	**2770**	**2860**	**2930**	**2980**
TCAITL MODEL SEASONAL PERFORMANCE IN COOLING MODE									
① Pdesignc (EN 14825)	kW	567,4	607,5	677,4	719,4	773,4	869,3	941,3	987,3
① SEER (EN 14825)		5,02	4,94	4,96	4,96	4,96	4,98	4,94	4,97
② ηs,c	%	198	195	196	196	195	196	195	196
TCAIQL MODEL SEASONAL PERFORMANCE IN COOLING MODE									
① Pdesignc (EN 14825)	kW	548,4	584,5	657,4	694,4	746,4	839,3	908,4	953,3
① SEER (EN 14825)		4,92	4,87	4,87	4,86	4,87	4,9	4,86	4,87
② ηs,c	%	194	192	192	191	192	193	191	192

TCAITZ-TCAIQZ MODEL		2560	2600	2670	2710	2770	2860	2930	2980
❶ Nominal cooling capacity	kW	569,4	610,5	680,4	722,4	776,4	873,3	945,3	991,3
❶ Nominal cooling capacity	kW	550,4	586,5	660,4	697,4	749,4	843,3	912,4	957,3
❶ E.E.R.		3,22	3,27	3,25	3,23	3,28	3,25	3,33	3,3
❶ E.E.R.		3	3,09	2,99	2,94	3,03	2,95	3,03	3,04
❶ Absorbed power	kW	176,8	186,7	209,4	223,7	236,7	268,7	283,9	300,4
❶ Absorbed power	kW	183,5	189,8	220,9	237,2	247,3	285,9	301,1	314,9
TCAITZ-TCAIQZ MODEL		**2560**	**2600**	**2670**	**2710**	**2770**	**2860**	**2930**	**2980**
❷ Sound pressure	dB(A)	68	69	69	69	70	70	71	71
❷ Sound pressure	dB(A)	60	60	60	60	61	62	62	62
❸ Sound power	dB(A)	101	102	102	102	103	103	104	104
❸ Sound power	dB(A)	93	93	93	93	94	95	95	95
Screw compressors	n.	1 inverter + 1	1 inverter + 1	1 inverter + 1	1 inverter + 1	1 inverter + 1	1 inverter + 1	1 inverter + 1	1 inverter + 1
Circuits	n.	2	2	2	2	2	2	2	2
Electrical supply	V-ph-Hz	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50
DIMENSIONS AND WEIGHTS		**2560**	**2600**	**2670**	**2710**	**2770**	**2860**	**2930**	**2980**
L – Width	mm	6090	7250	7250	7250	8350	8350	9450	10550
H – Height	mm	2480	2480	2480	2480	2480	2480	2480	2480
P – Depth	mm	2260	2260	2260	2260	2260	2260	2260	2260
❹ TCAITZ weight	kg	4314	4727	4797	4807	5641	5741	6146	6416
❹ TCAIQZ weight	kg	4694	5127	5197	5207	6041	6141	6546	6816
SEASONAL ENERGY PERFORMANCE		**2560**	**2600**	**2670**	**2710**	**2770**	**2860**	**2930**	**2980**
TCAITZ MODEL SEASONAL PERFORMANCE IN COOLING MODE									
① Pdesignc (EN 14825)	kW	569,4	610,5	680,4	722,4	776,4	873,3	945,3	991,3
① SEER (EN 14825)		5,08	5,01	5,03	5,01	5,01	5,04	5,02	5
② ηs,c	%	200	197	198	197	197	199	198	197
TCAIQZ MODEL SEASONAL PERFORMANCE IN COOLING MODE									

① Pdesignc (EN 14825)	kW	550,4	586,5	660,4	697,4	749,4	843,3	912,4	957,3
① SEER (EN 14825)		4,98	4,91	4,91	4,91	4,91	4,93	4,9	4,9
② ηs,c	%	196	193	193	193	193	194	193	193

TCAITL-TCAIQL MODEL		**21080**	**21160**	**21310**	**21500**	**21600 (*)**	**31700 (*)**	**31840 (*)**
❶ Nominal cooling capacity	kW	1089,2	1173,2	1319,1	1503,1	1591,1	1691,2	1831,1
❶ Nominal cooling capacity	kW	1051,3	1126,2	1266,1	1452,2	1537,1	1640,2	1772,1
❶ E.E.R.		3,18	3,06	3,16	3,05	3,14	3,16	3,05
❶ E.E.R.		2,9	2,86	2,88	2,89	2,93	2,95	2,84
❶ Absorbed power	kW	342,5	383,4	417,4	492,8	506,7	535,2	600,4
❶ Absorbed power	kW	362,5	393,8	439,6	502,5	524,6	556	624
TCAITL-TCAIQL MODEL		**21080**	**21160**	**21310**	**21500**	**21600**	**31700**	**31840**
❷ Sound pressure	dB(A)	71	71	72	73	73	73	73
❷ Sound pressure	dB(A)	63	63	64	65	66	66	66
❸ Sound power	dB(A)	104	104	105	106	106	106	106
❸ Sound power	dB(A)	96	96	97	98	99	99	99
Screw compressors	n.	1 inverter + 1	1 inverter + 1	1 inverter + 1	1 inverter + 1	1 inverter + 1	1 inverter + 2	1 inverter + 2
Circuits	n.	2	2	2	2	2	3	3
Electrical supply	V-ph-Hz	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50
DIMENSIONS AND WEIGHTS		**21080**	**21160**	**21310**	**21500**	**21600**	**31700**	**31840**
L – Width	mm	10550	10550	11650	12810	11650	12730	12730
H – Height	mm	2480	2480	2480	2480	2580	2580	2580
P – Depth	mm	2260	2260	2260	2260	2260	2260	2260
❹ TCAITL weight	kg	6526	6868	7248	9134	8386	9840	10277
❹ TCAIQL weight	kg	6926	7268	7648	9574	8826	10380	10817
SEASONAL ENERGY PERFORMANCE		**21080**	**21160**	**21310**	**21500**	**21600 (*)**	**31700 (*)**	**31840 (*)**
TCAITL MODEL SEASONAL PERFORMANCE IN COOLING MODE								
① Pdesignc (EN 14825)	kW	1089,2	1173,2	1319,1	1503,1	1591,1	1691,2	1831,1
① SEER (EN 14825)		4,97	4,94	4,96	4,96	4,93	5	4,96
② ηs,c	%	196	195	195	195	194	197	195
TCAIQL MODEL SEASONAL PERFORMANCE IN COOLING MODE								
① Pdesignc (EN 14825)	kW	1051,3	1126,2	1266,1	1452,2	1537,1	1640,2	1772,1
① SEER (EN 14825)		4,87	4,85	4,88	4,87	4,82	4,92	4,88
② ηs,c	%	192	191	192	192	190	194	192

TCAITZ-TCAIQZ MODEL		**21080**	**21160**	**21310**	**21500**	**21600 (*)**	**31700 (*)**	**31840 (*)**
❶ Nominal cooling capacity	kW	1094,2	1178,2	1325,1	1510,1	1600,1	1699,2	1839,1
❶ Nominal cooling capacity	kW	1056,3	1131,2	1272,1	1459,2	1552,1	1648,2	1784,1
❶ E.E.R.		3,26	3,14	3,24	3,13	3,24	3,25	3,15
❶ E.E.R.		2,98	2,93	2,95	2,96	3,02	3,04	2,95
❶ Absorbed power	kW	335,6	375,2	409	482,5	493,9	522,8	583,8
❶ Absorbed power	kW	354,5	386,1	431,2	493	513,9	542,2	604,8
TCAITZ-TCAIQZ MODEL		**21080**	**21160**	**21310**	**21500**	**21600**	**31700**	**31840**
❷ Sound pressure	dB(A)	71	71	72	73	73	73	73
❷ Sound pressure	dB(A)	63	63	64	65	66	66	66
❸ Sound power	dB(A)	104	104	105	106	106	106	106
❸ Sound power	dB(A)	96	96	97	98	99	99	99
Screw compressors	n.	1 inverter + 1	1 inverter + 1	1 inverter + 1	1 inverter + 1	1 inverter + 1	1 inverter + 2	1 inverter + 2
Circuits	n.	2	2	2	2	2	3	3
Electrical supply	V-ph-Hz	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50
DIMENSIONS AND WEIGHTS		**21080**	**21160**	**21310**	**21500**	**21600**	**31700**	**31840**
L – Width	mm	10550	10550	11650	12810	11650	12730	12730
H – Height	mm	2480	2480	2480	2480	2580	2580	2580
P – Depth	mm	2260	2260	2260	2260	2260	2260	2260
❹ TCAITZ weight	kg	6526	6868	7248	9134	8386	9840	10277
❹ TCAIQZ weight	kg	6926	7268	7648	9574	8826	10380	10817
SEASONAL ENERGY PERFORMANCE		**21080**	**21160**	**21310**	**21500**	**21600 (*)**	**31700 (*)**	**31840 (*)**
TCAITZ MODEL SEASONAL PERFORMANCE IN COOLING MODE								
① Pdesignc (EN 14825)	kW	1094,2	1178,2	1325,1	1510,1	1600,1	1699,2	1839,1
① SEER (EN 14825)		5,01	5	5,01	5	4,98	5,05	5,01

② ηs,c	%	197	197	198	197	196	199	197
TCAIQZ MODEL SEASONAL PERFORMANCE IN COOLING MODE								
① Pdesignc (EN 14825)	kW	1056,3	1131,2	1272,1	1459,2	1552,1	1648,2	1784,1
① SEER (EN 14825)		4,93	4,88	4,91	4,9	4,87	4,96	4,91
② ηs,c	%	194	192	193	193	192	195	193

Data at the following conditions:

❶ Air: 35°C – Water: 12/7°C.

❷ In open field (Q = 2) at 10 m from the unit.

❸ Total sound power level in dB(A) based on measurements carried out in accordance with regulation UNI EN-ISO 9614.

❹ Weight referred to the unit without load and not accessorised.

■ TCAIQL-TCAIQZ super-silenced versions.
Performance according to EN 14511.
(*) Unit not Eurovent certified.

① Low temperature application (7°C)

② Seasonal energy efficiency: low temperature cooling (EU Regulation 2016/2281)

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